REPORT ON A COLONY OF HAMINOEA AT BALLAST POINT, SAN DIEGO, CALIFORNIA

BY V. D. P. SPICER

On the May 12 field trip of the recently formed San Diego Shell Club a colony of Haminoea was found on Ballast Point, San Diego Bay. When I reached home and compared the specimens I had taken with the Haminoea which I had, I found them distinctly different from any in my collection. I immediately consulted with Dr. Fred Baker, who has been the Dean of San Diego shell collectors for many years, and found no similar shells in his collection. It is proposed to call this form *Haminoea virescens* var. *rosacea*.

Sunday, June 11, 1933, with a minus 1.1 ft. tide offered the first opportunity to establish the limits of the colony and determine the ecological features.

The colony occupies a limited area on the leeward or bay side of Ballast Point, at the entrance to San Diego Bay. It extends about three hundred feet along the shore and from about six-tenths feet above mean low water to beyond minus one and eight-tenths feet. The marginal boundaries are sharply delineated; the inner limit being established by a mud flat area with scattered stones, the outer by the spot where the strong ebb tide currents impinge. This area is very sheltered, the only disturbance being caused by the waves of passing vessels. The bottom is of small round stones, approximately six to twelve inches in diameter and everywhere closely overgrown with *Aletes squamigerus* and sea weed. The water carries a considerable amount of suspended mud. The Haminoea were quite abundant throughout the area. The only other molluscs occuring in quantities within the boundaries of the colony were *Murex festivus* and *Conus californicus*.

For comparison I chose a colony of typical *Haminoea virescens* with which I was familiar. This typical colony is on the seaward side of Point Loma in a series of shallow tide pools in the sandstone, which at high tide are beneath heavy surf. I secured my specimens at a plus 3.0 ft. tide

and at plus 2.0 ft. the pools are nearly all completely separated from the sea. The other mollusca abundant there were *Nuttallina californica* and among the rocks which margined the pools, *Tegula funebralis, Acmaea patina* and *scabra.*

No other colonies of Haminoea could be located in the areas adjacent to Ballast Point, even where similar environmental conditions seemed to prevail.

On June 11, 1933, fifty specimens were taken for study. Though no selection was made they were found to be very uniform in size, ranging from eighteen to twenty-two mm. length of shell. They were kept alive in a large shallow pan of sea water. Showing no alarm, they explored the limits of the container, deposited three clutches of eggs, and copulated during a forenoon's observation. They showed distinct phototropism, clustering at the side nearest the strong light used for their observation, and when the light was moved the regrouping near its new position was soon apparent.

The eggs were extruded from the right side in a gelatinous ribbon about five-sixteenths inch wide and an inch long. The eggs appear as minute yellow dots in close-set rows across the ribbon, about forty-two thousand in a set. As the ribbon of eggs touched the bottom it adhered and remained standing on edge as the mollusc wandered away. The adhesion was found to be quite strong even before the egg depositing was completed. The total time required to deposit a set of eggs was about ten minutes.

For comparison a number of typical *Haminoea virescens* (Sowb.) from Point Loma were added to the pan. There was no difficulty in separating the Point Loma Haminoea from the Ballast Point specimens as they were all much smaller, the shells showed a greenish color, and though the markings of the body were similar, the Point Loma molluscs were distinctly darker.

HAMINOEA VIRESCENS, variety ROSACEA.—Shell thin, transparent, globose, pale rose in color, color slightly deeper about the upper extremity. Aperture dilated and showing

only moderately the constriction about the upper third which characterizes the typical form. Sculpture consists of closely set sinuous incremental lines which appear slightly granose under a strong glass. Epidermis thin, corneous. Otherwise the description of the typical *H. virescens* applies. Altitude 21 mm. greatest diameter 14 mm.

Animal a mottled brown closely flecked with white, the markings of the body within showing through the shell. Eyes very dark blue. When fully extended the body length was 42 mm., the greatest width 22 mm., width of head 19 mm.

Type in my collection. Paratypes No. 161206 A. N. S. Phila. and in Dr. Fred Baker's collection.

PTEROPODA FROM LOUISIANA

BY MARTIN D. BURKENROAD

During an exploration of Louisiana coastal waters, from 1929 to 1931, nine species of euthecosomatous pteropods and one undetermined larval gymnosome were taken. The local and seasonal distribution of these forms was as follows:

None were taken in the brackish estuarine area inside the shoreline proper of the Gulf. *Creseis conica* (Eschscholtz) alone appeared sporadically in the shallow, variably brackish to fairly salt inner littoral waters extending fifteen or twenty miles offshore from the Gulf beach. These records are based on year-round towings. The remaining forms were taken on the two occasions when a penetration of the outer, more oceanic littoral area was feasible, in August, 1930, and in May, 1931. The limited material available from the former occasion contains several specimens of *Creseis acicula* (Rang) and *Cavolinia longirostris* (Lesueur). The series of tows from the latter contains all the species listed, with the exception of *Creseis acicula*. Both collections are from the same area: thirty-five to forty miles off Grand Isle and about thirty miles W.S.W. of the Southwest Pass of the Mississippi River, in the westward flowing